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Eminent Veterinary Clinicians of the Past

Addresses on the occasion of the Central Veterinary Society's R.C.V.S. Centenary Commemoration Meeting*

I—By DR. J. T. EDWARDS

INTRODUCTION

When your Honorary Secretary approached me some months ago to deliver a short address before this Society upon the above subject, I did not know that the occasion was destined to be one to celebrate the centenary of the parent corporation whose motto is *Vis unita fortior*. Hence, although I readily accepted the honour of delivering an address upon an aspect of a subject which has been a source of no little interest to me for some time, namely, the history of the development of our profession, I have felt compelled to adjust somewhat the remarks that I shall be allowed to make within the time allotted to me to some men to whom we must now pay homage, who have been eminent in bringing strength, through cohesion, to our profession. I shall, I believe, have no difficulty in corroborating the view put forth by the late Major-General Sir F. Smith, that, after the foundation, particularly, of a wisely conducted journalism in this country by Youatt and Percivall, it was the town and country practitioner—the backbone of the profession—who redeemed the errors then existing and placed the profession on a sound footing for development.†

If a motto more fitting for the occasion of the present meeting need be sought than that which was proposed by Professor Morton‡ for the crest of the Royal College of Veterinary Surgeons, I suggest it is to be found in that selected by one of our youngest and most vigorous affiliated societies, the South African Veterinary Medical Association, namely, *Pristinae virtutis memoris*, said to be a variation of the well-known saying of Paul Kruger which, translated, reads: "Search the past for all that is good and beautiful . . . then build your future."

A remarkable phenomenon of the present time is the interest displayed by the learned professions in tracing the historical development of their art or science. As the late Sir Clifford Allbutt said, no one can profess to have an understanding of the present state of human medicine unless he has taken pains to trace the stages by which it has arrived at that state. Although the veterinary profession, perhaps much more so than the medical profession in the public mind, has not been looked upon as a highly cultured calling, in the sense that it does not demand the display of high intellectual gifts, yet to those who are well acquainted with the whole body of veterinary literature the historical research carried out at the moment by several of its members represents one of its most fascinating and, still more, fruitful lines of study. Time will not permit me to dwell upon this special literature, but it has led to such judgments as that expressed by the late Sir Frederick Smith, that "*the father of the veterinary art of the present day*" was the Greco-Roman or Byzantine horse practitioner or "hippiatrist"—Apsyrtus, born in Prusa in Asia Minor, opposite to Constantinople, somewhere between A.D. 330 and 340. This view has not been seriously challenged by other modern historians. Following upon the writings particularly of the remarkable British veterinarian, Delabere Blaine (1770-1845), to whom can be justifiably assigned the title of "*father of canine pathology*,"§ it had been often the custom to look upon the Roman, Vegetius, who flourished about A.D. 450-500 and whose great work, which was first printed in 1528—and is believed to be the first veterinary work ever printed—as the "Veterinary Hippocrates." It is now well known, however, that Vegetius was not an original observer, but a compilator who drew mainly on the works of the Byzantine hippiatrists, Chiron and others, who were contemporaries or near-contemporaries of Apsyrtus, "an original observer with doubtless an acutely critical faculty." The fragments available of the writings of the hippiatrists were not collected until the tenth century, by order of the Emperor Constantine the Seventh, at a time when the Eastern Roman Empire—"the birthplace of the veterinary art"—was already in a state of decay, and the fragments arranged in a work entitled the *Hippiatrika*. Copies of the work had already been made by the Arabs and several found their way into Western Europe after the fall of Constantinople to the Turks. It was then translated by Ruellius and published to the world in 1530 by order of Francis I, King of France. Smith lists the names of 17 authors who contributed to this collection—Apsyrtus, Heracles, Theomnestus, Pelagonius and others—about the lives and work of many of whom a good deal is known, and their output seems certainly to vary a great deal in quality as well as quantity.

I shall not review at length the work of these eminent veterinary clinicians except to say this much about the particular merits of these horse practitioners of the Eastern Roman (Byzantine) Empire, in so far as they convey lessons to veterinary clinicians of the present day:—

(1) *A Brief General Review of the Historical Position which would enable fair decision on the question of individual eminence in the Clinical Veterinary Art.*

Although the records show that in the matter of observing and classifying the various diseases of the horse and in the matter of treatment, especially surgical treatment, of those diseases the veterinary art had reached a very advanced stage of development in Byzantium, the diseases of the other domesticated animals receive no notice in the *Hippiatrika*. Even in the agricultural compilation, the *Geoponica*, which was produced at the same time, and includes discourse on these other animals, their diseases and the manner of treating them receive only crude and scant consideration. We may, therefore, at this stage well ask why it was that since antiquity until very recent times and, as we shall try to show, in spite of the pressing national need for veterinary attention for the other species of domesticated animals, this disproportionate amount of clinical skill was devoted to the horse, and what were the ultimate effects on the development of the art of concentration on this one species.

The horse, which was about the last of the animals domesticated, about 2000 B.C., was not brought into intimate association with the human economy until the 7th century B.C., in Babylonia, for use in warfare as cavalry. Previously it had been used in wheeled vehicles, or chariots; but the introduction of the cavalry arm greatly increased the mobility and striking powers of armies. The horse thenceforward, until the last Great War (1914-18) was, therefore, one of the mightiest engines of war, and states and peoples addressed themselves most to the care of this animal for self-preservation. In ancient India the elephant was used mainly for this purpose and received chief veterinary care. Towards the end of the 7th century A.D., during the period of the Crusades, the art of shoeing horses with nailed-on iron shoes was discovered—an event which, it has been said, produced a profound effect, not only upon the development of the veterinary art, but on the very existence of nations. After the break up of Roman dominion in the west, population became segregated in very small communities, under feudal lords, who were not in a strong enough position each to maintain a cavalry establishment and employ skilled veterinary attention. The care of the horses was entrusted usually to a household official, the Marshal (Seneschals and Chamberlains being ascribed other duties). During the long marches of the Crusades, the Marshal often deputed the treatment of minor ailments to the skilled craftsman, the shoeing-smith, entrusted with the *ferrure*. Gradually the craftsman, the *farrier*, supplanted his superior. In the English language the word Marshalcy itself became replaced by the humbler Farriery, while in France, to this day, the craftsman has retained the appropriated and more exalted term *maréchal*.

In any estimate of the veterinary clinicians of the past, one must bear in mind this historical evolution of their calling. The foundation of the veterinary schools in Europe during the latter part of the 18th century is commonly thought, erroneously, to have marked the beginning of the veterinary art. They were intended to produce, and to some extent succeeded in producing,

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* The luncheon given by the Central Veterinary Society in honour of the Centenary of the Royal College of Veterinary Surgeons, on Thursday, March 30th, 1944, was followed by a general meeting, held with the same motive, at the Kingsway Hall, W.C.2, when the addresses now reproduced were delivered. Those attending included the President of the Royal College, Mr. Wm. Nairn, and a number of Past-Presidents and present members of Council of the Governing Body.

† Smith's *Hist. Vet. Lit.* 4. 36.

‡ Although the College motto was proposed by Professor W. J. T. Morton (1800-1868), the selection may have been influenced by words used some years previously by James Castley (1781-1832): "His (Castley's) last contribution (to the *Veterinarian*) was in December, 1832, when he begged the profession to cease fighting and combine for improvement: 'let us recollect that union is strength.'" Castley was "certainly a practitioner of outstanding ability, and a man of sufficient personality to attract the attention of the military authorities of his day. . . ." Smith's *Hist. R.A.V.C.*, p. 92.

§ Smith's *Hist. Vet. Lit.* 3. 88.

the corps of trained men which some enlightened rulers and thinkers and public-spirited people pressed for to mitigate the devastations caused generally by animal disease. In truth, however, the immediate demand of the public was for the clinician of the farrier type, and it was not till very long after the opening of the schools that the products were competent to deal with the wider problems. In this address particular emphasis is laid upon this phenomenon, because, in our view, assessing the matter historically, the claim of any individual in our history to pre-eminence as a veterinary clinician must be adjudged by the extent to which he had inherited what was best already in the farrier class, and had adjusted his practice to current progress, and then had taken most pains to transmit his own experience to his posterity; in other words, his title to eminence must rest on his contribution to the *evolution* of the art. Much that is perfectly true has been written about the ignorance and other shortcomings of the farrier class. Just before the opening of the veterinary schools, a few, though admittedly only a few, had shown evidence of outstanding merit. According to Smith, James Clark of Edinburgh, "Farrier" to the King for Scotland, who flourished towards the end of the 18th century, must be accounted "father of modern veterinary hygiene" and the last and greatest of these men. According to Leclainche, Philip Etienne Lafosse was the last of the French "maréchaux" and the greatest. It is not our own view that these were actually the "last." Neither was it the view of the élite of the British veterinary surgeons who protested against the inadequacy of the veterinary training at the London College and to redeem this grievance formed the movement which brought about the 1844 Charter. Their complaint was that their own skill as practitioners was derived mainly from their forbears and not from the precepts received in the process of qualifying for an intrinsically worthless College diploma.

William Dick (1793-1866), starting life as a working blacksmith, and himself a blacksmith's son, was entirely heir of the farrier class, and the short "visit" he paid in 1817 to Coleman's college merely made him think that he could readily accomplish at least something better than he had seen there on his return to Scotland. As some historians see now more clearly the pity is that Lafosse and not Bourgelat (1712-1779), a lawyer, nobleman and horse-lover, and a man of powerful social and political influence, was not entrusted with the opening of the veterinary teaching (1762) in France. The wisdom of the appointment of Sainbel* to the London College (1791) has also been much disputed, though from what we know of his ideals they were far higher than those of Coleman who succeeded him on his death, tragically, within two years of his appointment. The approach to James Clark apparently failed because steps were being taken to found a school in Edinburgh, the project there falling through afterwards because of the political situation. Where in Europe the best men of the farrier class initiated veterinary teaching at the schools, it seems on the whole to have been established on a more solid and durable foundation.

That at the creation of the schools it was, on the whole, neither wise nor practicable to proceed except by cautious acceleration of evolution of the most éminent men of the "farrier" class can be seen if we take account of the general circumstances then prevailing.

In England, down to the time of the Industrial Revolution at the close of the 18th century, and of the agricultural revolution which accompanied it, the sheep had held for several centuries foremost place in the national economy, the export of the high-quality wool then constituting a large part of the national revenue. Although losses caused by liver rot and scab were immense in some years and some districts, little skilled attention was paid to them. Outbreaks of severe disease, collectively called *murrain*, ravaged periodically the cattle population, which were mainly used for ploughing and draught in the rude tillage of the open-field system of husbandry, a system, as practised, which did not permit of adequate fodder conservation for winter keep. It was not until the latter part of the 18th century when new crops such as roots and clover were introduced, and which permitted of an improved rotation of crops and more ample winter keep, and the common lands were finally enclosed, and the genius of Robert Bakewell showed how advantage could be taken of these improvements by selective breeding of farm animals for high production, that the breeds of animals became transformed to acquire the high value individually that we recognise in them to-day. Following closely after the period of the Industrial Revolution, when the energy of the human race in all directions, stirred as it had been three centuries earlier, in Tudor times, became sharply reawakened after over a millennium of quiescence, the roads which had been allowed to lapse into dismal neglect since Roman times, were improved through the genius of men like Telford and Macadam and horse transport on roads, within and between the fast multiplying centres of urban population, grew enormously. Thus, in addition to the need at that time for skilled veterinary clinicians for the cavalry—a demand which became urgent for the Napoleonic Wars (1793-1815) occurring soon after the opening of the London Veterinary College in 1791—there was an almost sudden large demand for a race of town practitioners for carriage and draught horses. London became the "Mecca" of horse practitioners, and about the year 1825, according to W. Rieck, there were counted about 120 making a remunerative living there, each in addition to carrying out professional work, mainly in examining horses for soundness before purchase, owning a forge and a druggist's shop from which the public purchased horse medicines according to its whims or fancy. The demand for this form of veterinary attention was not greatly decreased after the introduction of steam power in the third decade of the 19th century. It was from the *élite* of the families who carried on these remunerative practices, such as the Fields of Bond Street, the Turners of Croydon, the Goodwins of the Royal Mews, the Kings of Stanmore, the Mavors of London, and, especially noteworthy, the Mayers of Newcastle-under-Lyme, sprang the men who revolted against the fettering of the profession by Coleman in conspiracy with Astley Cooper and other surgeon friends, who for nearly half a century had monopolised the right to grant a qualifying diploma from the London College after wholly inadequate training. The movement inspired originally by the journalism of W. Percivall, W. Youatt, Bracy Clark and F. C. Cherry in 1828 took definite shape in 1840 and culminated as a "first step" in the emancipation of the profession by the grant of the Royal Charter of 1844, which recognised the practice of the veterinary art as a profession. An outcome of this struggle was that those who practised the art were entitled for the first time to conduct the examination of entrants to the profession. Difficulties arose, however, mainly through the unwillingness of Coleman's successors at the London College to admit the supremacy of the Royal College and to a tactical error in dealing with the Edinburgh school in deputing a delegation, which included a representative from the London College, to inspect, the adverse report causing Dick to revert to the examination of his students by the Highland and Agricultural Society. Though a Bill was introduced into Parliament in 1866 to secure further the profession, it was not until another movement took place to rectify the grievances persisting under the Charter, a movement which began with the First British Veterinary Conference, held in 1867, organised mainly by another practitioner, George Boddington, of Cardiff, with the active support of Lawson and of Greaves, of Manchester, that a further step forward was made in consolidating the profession. This was mainly the work of George Fleming, who as a young Army veterinary surgeon, sponsored in early life by Lawson and trained by Dick, attended the conference on his return from China after previous service in the Crimea. The organ of publicity, *The Veterinarian*, which in the brilliant hands of Youatt had contrived to arouse practitioners of the veterinary art to a sense of corporate responsibility, had passed after the death of his colleague, W. Percivall, in 1854 into the hands of the very men whose self-interest had delayed progress, namely, the heads of the London College, and in those hands it was lifeless. Hence Fleming, in 1875, founded the *Veterinary Journal* and in his hands as well as in those of his successor, W. Williams, and his son, W. Owen Williams, the clinical veterinary art was revivified, particularly by the publication of the experiences of the more fortunated Continental schools, and a new vitality infused into the profession. The Veterinary Surgeons Act of 1881, which strengthened the legal status of the profession and brought about what is called the one-portal system of entry, was mainly Fleming's own work.

It may here be added, parenthetically, that a false impression has obtained currency recently that the shortening of the course of training before the Act of 1881 was caused by the rivalry of the London and Edinburgh schools. The original three years' course planned by Sainbel—and it is probable that the hand of John Hunter can be detected in that remarkably well-conceived scheme—was shortened immediately after the appointment of Coleman, to a few months, as low as three even, because as the governors of the time admitted on protest, to demand more of the man would be to exaggerate his abilities.

The Act of 1920, which rescued the profession from the precarious financial position in which the Royal College had previously been maintained, through dependence solely upon the examination fees of students, was almost entirely again the work of one man, the late Sir John M'Fadyean, who had begun action to this end during the memorable period of his presidency, 1906-1909.

This very short summary proves that we owe veterinary progress in Britain almost entirely to the vitality generated within the profession itself. Our corporate strength we owe, in the main, to the zeal and energy of enterprising clinicians, the two chief torch bearers being Thomas Walton Mayer in the case of the Charter of 1844 and George Fleming in the case of the Act of 1881.

(2) *The Measure of Indebtedness of the Clinical Veterinary Art to the Evolution of Human Medicine.*

This is much smaller than is popularly thought and the association has not been invariably wholesome and at some critical stages it has been frankly vicious. Although the Byzantine horse practitioners had themselves received sometimes a medical education, the state of *human* medicine within the Byzantine empire throughout the several centuries of its existence was at a very low ebb. Contrary to the case in veterinary medicine, no outstanding contribution was made to its advancement. The great age of Greek medicine was nearly as remote from the time of Apsyrtus as we at the present day are from the Norman Conquest, Hippocrates, "the father of medicine," having lived 470-356 B.C. A period of about eight centuries therefore separated the golden age of Greek human medicine from the golden age of veterinary medicine in the same territory. The development of human and veterinary medicine does not, therefore, necessarily synchronise in the same territory.

* Smith's summary of that critical incident is as follows: "In summing up Sainbel's practical knowledge one is compelled to estimate it was not very wide. He seems to have had a good acquaintance with the theory and practice of shoeing, though we cannot admit his claim to originality. He is, excepting in one respect, admirable on glanders. His knowledge of sprains is not good, and his practice in this respect appears to have been confined to the horse of the riding school. He understood the various causes of colic, but his practice was dilatory and generally out of date. He had a sound foundation on which to build the experience he was about to acquire, and we agree with Blaine that his natural abilities would, had he lived, have made up his deficiencies. Gamgee, sen., 70 years later, says he was the fittest man for the post. James Clark, of Edinburgh, lacked administrative knowledge, but as a clinical teacher would have been ideal. Moorcroft combined both essentials, but though he was in London his name is never mentioned in connection with the first appointment to the Veterinary College. This is incomprehensible. After Sainbel's death a joint professorship shared by Moorcroft and Coleman was in due course established. After four or five weeks Moorcroft retired, for which Coleman never forgave him. The two men were utterly unsuited to work together. It was the irony of fate that the most able man in the veterinary profession (subsequently a great explorer and Empire builder) should have withdrawn from the College at the time a strong and highly trained man was urgently required, and the school left to an unqualified and untrained man who had never attended a sick animal in his life."—Smith's *Hist. Vet. Lit.* 2. 103.

After the conquest of Egypt by Alexander's general, Ptolemy, and the foundation of the great centre of learning at Alexandria, dissection, which had been forbidden in Greece and Rome, was practised, marking the beginnings of a foundation of anatomy in medical teaching. Galen (A.D. 130-200) of Pergamos, "in whom was united as never before—and indeed one may say, never since—the triple combination of observer, experimenter and philosopher" (Osler), had recourse to dissecting cattle, pigs and monkeys through lack of opportunity to dissect the human body.

In the early renaissance of the 12th century, the enlightened monarch, Frederick II of Sicily, ordained the dissection of pigs to the medical faculty at Salerno. After the Renaissance proper of the 15th century, anatomy was studied in earnest at Bologna and Montpelier, but in England it was not until the 18th century that the subject was taken up, extra-murally, in the training of surgeons, a class apart from the more "learned" physicians, and regarded merely as craftsmen, who had not long been dissociated from the barbers. Likewise, through scarcity of human corpses, these men had recourse often to dissecting dogs and other animals, and many of them thus developed a strong bent for natural history and did not disdain, as the more exclusive physicians did, practising the veterinary art. John Hunter (1728-1793), the greatest of them, was the "life and soul" of the movement which brought about the establishment of veterinary education, in 1791, in this country. His death, however, tragically coinciding with that of Sainbel, a young surgeon, Edward Coleman (1765-1839), as has been already said, was appointed by mischance head of the London College, and all progress was doomed for half a century. This was the greatest tragedy that has befallen the clinical veterinary art in this country. Several of the earlier professors at the Continental schools had also received a medical training, but invariably those who succeeded, like Bollinger and later Bernard Bang, found that to succeed they had to cast aside their previous training and take pains to start afresh, to acquire an eclectic veterinary outlook. Several of the most successful veterinary practitioners shortly after the opening of the London College had also been trained as surgeons, such as Moorcroft, Bracy Clark, Delabere Blaine, Goodwin and William Percivall. Coleman's jealousy, however, discouraged outstanding men of this class from entering our ranks; as all fees went into his own pocket the rabble which he welcomed more readily satisfied his greed and was content with his lack of veterinary knowledge.

Several examples could be given of the evil effects, upon clinical veterinary medicine, of attempts to associate it closely with, or make it subservient to, human medicine, besides the glaring one committed, after Coleman's appointment, of entrusting the examination of the London veterinary students entirely to a body of medical men without veterinary knowledge. Two will suffice.

The enterprising and able director, Renault, who became head of the Alfort school in 1838, in his laudable efforts to turn out some well educated men, superior in ability and outlook to the ordinary *maréchal* type, committed two blunders the effects of which became difficult to rectify later. One was the attempt to train two cadres, a higher and a lower one, in accordance with the official (Napeolonic) decree of 1813. This resulted, as it has resulted everywhere where it has been seriously tried since then, in failure. The other was the deliberate separation of veterinary teaching from agriculture and stock-breeding and its superimposition upon the course of training then adopted for human medicine. His predecessor, Yvart ("the shepherd"), with his simple good sense, it became afterwards clear, in the light of the failure of Renault's project, had been undoubtedly right when he had insisted on re-inserting the subject of "rural economy" into the veterinary curriculum after its suppression by the official decree of 1824. (Leclainche.)

In 1814, after Naumann had ceased to be director, the Berlin veterinary school was placed by the Prussian government under the control of the Charity Hospital in the same city, and remained under that control until it was rescued by the appointment as director in 1870 of the strong and able veterinarian Christian Gerlach—one of the outstanding personalities in veterinary history. According to Schmaltz, the German veterinary historian, the subservience lasting from 1812 to 1870 "led to the most shameful consequences and left the most disagreeable recollections in the minds of contemporaries."

Although it has to be acknowledged that the cause now under survey is deeply indebted to innumerable individual men who had had a medical training and has received some of its most distinguished recruits from the ranks of those men, the pages of history provide abundant testimony that *the clinical veterinary art is a separate sphere* and nothing but harm follows any attempt to cause it to revolve, as it were, within another sphere—most dangerous of all being any attempt to make it revolve within the idealistically neighbouring one of human medicine. This does not mean to say that the clinical veterinary sphere has not been expanded or caused to revolve more powerfully through the initiative of those who have ventured outside its particular orbit to bring back to it everything that was useful from other spheres, and, in the process, help to cast out what had become no longer useful or needful. This will be exemplified later.

(3) *Some Further Remarks upon the Clinical Veterinary Art in Antiquity: the Special Merit of the Hippiatrists—Freedom from Superstition.*

Elsewhere in the world during the period of the Byzantine hippiatrists, the state of veterinary medicine was low, except perhaps, and on a rather different plane, in some remote territories in the East, namely, in India and in China. In Rome it was at a notoriously low ebb, and was currently practised, for horses and for cattle, by men of low social and intellectual standing. It was partly to remove the ignorance of this class that writers who were mainly well versed in the literature but had little first-hand experience, like Varro (116-27 B.C.), Columella (*ca* A.D. 40), Palladius (4th century A.D.) and Vegetius (A.D. 450-510), undertook to compile their well-known texts, which it is now realised were largely drawn from Greek sources.

There was a large experience on veterinary matters, long antedating the period of the Greco-Roman horse practitioners, upon which they could have drawn. We have no records of the state of the veterinary art during the heyday of Greek culture—though doubtless they existed and are now lost. Simon of Athens (*ca* 430 B.C.), and Xenophon (445-354 B.C.) had written on the breeding, management and choice of horses, while Aristotle (384-322 B.C.), the biological portion of whose extensive writings on "natural philosophy" can be said to have been taken up again as a contribution to progress only with the publication of Darwin's *Origin of Species* in A.D. 1859, devoted a chapter of his *Historia animalium* to the diseases of animals. In this famous chapter he deals with the diseases of horses, asses, dogs (rabies), cattle, elephants, camels, birds, fishes and insects, recalling somewhat the range found in the probably much earlier Sanskrit literature.

However, outside Greece, extending from Egypt throughout Asia, there had been an earlier great development, extending back at least to neolithic times and advancing markedly during the latter Bronze (2000 B.C.) and Iron Ages, in the domestication of animals and in matters concerning their maintenance and health, and conditions of transfer and sale. As, however, existed in human medicine, and persists in *primitive societies* to the present day—and to a far greater extent than we care to admit in our society, among all social grades, rich and poor, learned and ignorant, almost alike—there was a tendency to attribute disease to *demoniacal* origins and to regard it as a something to be exorcised by incantations or propitiation.

It would be beyond the compass of this short essay to dwell upon the deep-rootedness of this phenomenon in all human nature, and the serious researches of anthropologists and psychologists to discover its origins and meanings. In the primitive tribes of antiquity and in many tribes surviving in a primitive state to this day, we have therefore the calling of priest, lawyer and doctor, both of man and of animals, combined in the one person. Fraser in his *Golden Bough* claims that in that state of society the functions of such an individual were on the whole beneficent. With the development of society, it appears, separation of these arts tends to occur, sometimes with difficulty, as in the clinging of the *priesthood* to medicine throughout the Dark Ages in Western Europe, and sometimes rather violently, as the separation that began through the teachings of Socrates and Plato during the time of Hippocrates between the medicine of man and the medicine of animals, with their attribution to the human being, as a principle in their philosophy for the laying down of a higher code of ethics, of a "soul" that was not possessed on the same high plane by other animals. It was this separation propounded by his philosopher contemporaries that induced Hippocrates to omit all experience relating to animal disease in his writings, though he was probably well versed in it, and it has been recorded, he rejected with disdain the suggestion that he should deal with the question of luxation of the patella in the ox. Though continued in modified form in Alexandria, after the Greek conquest of Egypt by Ptolemy, as a doctrine for four centuries after the Christian era, Neoplatonism probably never gained a firm hold on the soil of Greece itself, and by the time of the Byzantine hippiatrists, when, as has been said, human medicine itself was at a low ebb, the population had become indifferent to it.

The Byzantine hippiatrists therefore have, on the whole, especially in the case of Apsyrtus himself, *one outstanding feature* as clinicians, which marks them out as eminent among clinicians of all time, namely, at their best, *an entire absence of superstition.* Again at their best, they were not credulous, and they refused to trade upon the credulity of their clients. In this respect they had inherited what was best from the Hippocratic teachings—*calm, careful observation, sound commonsense reasoning, and the use of remedies and manipulative procedures that were skilful, humane and moderate. They were patient in communicating their knowledge to disciples.*

Except fitfully appearing here and there among a few rare individuals, we do not find these qualities prevailing within our own country until towards the beginning of the 19th century. Dick, a blacksmith who founded the Edinburgh College in 1823, certainly had the qualities in very large measure, and the benefits of his outlook and example were soon reaped by all countries peopled by English-speaking races.

W. Percivall (1792-1854), "the greatest man the Army Veterinary Service has produced," possessed those qualities still more

eminently, and to the extent that the profession was indebted to Dick for his teaching it lay under obligation to Percivall for his writings on the clinical veterinary art during the first half of the 19th century. Contrary to his gifted associate on *The Veterinarian*, W. Youatt (1776-1847), Percivall wrote specifically for the profession, whereas Youatt tended to popularise his knowledge—a process which the historian observes leads almost inevitably in the end to disaster.

Coleman, the surgeon, most certainly did not have those qualities, and the baleful effects of his long regime of 46 years persist till the present day. Though undoubtedly outwardly, as Leclainche has said in vindication of him, a "gentleman," the sterling qualities of the blacksmith whom he dubbed "a vulgar Scotsman" were absent, and we cannot but confirm Smith on all the counts we have examined. It was, as we have said, the surge of a considerable body of practitioners imbued in no small measure with the qualities of their forerunners—the Byzantine hippiatrists—against this unduly demoniacal anachronism that mainly brought about the event the centenary of which we celebrate to-day—namely, the grant of the Charter of Incorporation of the Royal College of Veterinary Surgeons in 1844, which made us a profession.

(To be continued)

REPORT

[Report of Director of Abattoir and Livestock Market Department, City of Johannesburg, for the period July 1st, 1943, to June 30th, 1944.]

Over one and a half million animals passed through the Livestock Markets of Johannesburg during the period under review in this report, whilst over a million were slaughtered in the abattoir. This year shows a slight reduction in the number of animals of all kinds slaughtered, as compared with the previous year.

The South African Government set up a Meat Commission in 1943 to enquire into and report on the marketing and distribution of meat in the Union. Based on the recommendations of this Commission, Emergency Regulations were promulgated under the War Measures Act. These Regulations had the effect of altering the method of selling stock per head, as well as per pound live-weight, and substituting a seasonal producer's price fixed at certain centres, determined on the dead-meat weight and grade. Thus under this new scheme all auction sales of slaughter stock on the market have been discontinued, and all such stock consigned to the agents is taken over after slaughter by the Food Controller at a fixed price, based on hot dressed weight and grade. The meat is then distributed to the trade at fixed prices, by the Food Controller.

As a result of an outbreak of foot-and-mouth disease in Bechuanaland in January, 1944, movement of livestock into the Union was prohibited until June, 1944, when the territory was reopened. During the year the Secretary for Public Health was notified of 132 cases of tuberculosis in cattle, and 462 cases in pigs. Animals in the City service were 1,730 mules and horses, 1,217 oxen. Visits to dairies were made in 218 cases and 10,309 cows inspected for tuberculosis of the udder, and other diseases. Five cases of open tuberculosis were found (none in the previous year). The various appendices to the report give particulars of the animals slaughtered, meat condemned and other details of the work performed by the department which is in the capable hands of Mr. A. C. Kirkpatrick.

D. J. A.

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"BORDER-LINE BEASTS SOLD AS ATTESTED"

Allegations that "in certain markets in the Midlands and elsewhere" cattle of distinctly border-line quality were being sold as attested were made (says the *Farmers' Weekly*) at a recent meeting of Shropshire F.U. executive. "Without doubt," said Mr. Williams, "there is a little ramp going on. These cattle will never pass the next test." He himself bought five head that had fallen down at the next test, and he knew of another man who bought 120 head, eleven of which went down, eight of them out of the same bunch. All were called attested.

It was decided to refer the following resolution to the livestock and milk committees, "that N.F.U. be urged to press the Ministry of Agriculture to see that when any animal carrying an attested licence is offered for sale, it should have a certificate showing clearly the skin fold measurements of the two double intradermal tests carried out within the past 12 months."

THE VETERINARY RECORD

March 3rd, 1945

THE WATER BILL

THE purpose of the above Bill which was laid before Parliament recently is to enable effect to be given in England and Wales to the policy set out in Part 1 of the White Paper (A National Water Policy—Cmd. 6515) of April, 1944.

By comparison with the White Paper the Bill makes dull reading, but it would be difficult to exaggerate its importance to the country as a whole and to rural areas in particular. Its effect upon the agricultural community will be far reaching, and its value to the veterinary profession is obvious. Those of our members who have not yet read the White Paper are urged to make themselves familiar with its contents. It is written in lucid style and is concerned with ways and means of ensuring that all reasonable requirements for water can in future be met. The natural resources of the country in terms of rainfall are adequate, often far more than adequate, for any demands that are within reasonable contemplation. Even allowing for a loss of about 40 per cent. by evaporation, the quantity of water flowing into the rivers and streams and underground collecting areas—all primarily derived from rainfall—amounts to about fifteen times the total present consumption of water for domestic and industrial purposes in England and Wales as a whole. The problem, therefore, is not one of total resources, but of organisation and distribution. As the report points out, for the housewife to turn a tap is a simple operation; its very simplicity belies the immense amount of organisation, labour, expense and ingenuity which lies behind the regular supply of water which she thus obtains. "At the present time water undertakers supply about 500,000,000,000 gallons every year. They spend about £30 millions a year in running costs alone, and about £10 millions a year on new works. Yet the cost of a piped supply of water to the householder of an average small house, for all the uses of the household for a week, is seldom more than the cost of a single glass of beer."

Nevertheless, at the present time, nearly 30 per cent. of people living in rural districts in England and Wales are still not reached by water mains. One of the principal objects of the Bill is that the present law shall be altered to require a local authority to ensure that mains are carried wherever practicable to enable a house to be connected at a reasonable cost, and that wherever practicable piped water shall be brought to the house. At present the law is satisfied if a supply of wholesome water, which may be a well, is within reasonable distance of the house. As the White Paper points out in some detail, the importance of adequate supplies of piped water for agricultural purposes cannot be over-estimated, if efficiency in agricultural production is to be achieved. In the past, production has in many areas been seriously hampered by lack of water. In the future this will be even more apparent as the success of modern scientific methods of alternate husbandry, and the improvement in the quality, as well as the quantity, of the milk supply, depend largely on adequate supplies of water on the farms. The campaign for the reduction of disease in farm animals is also materially affected by lack of water in rural areas.

It will be obvious that the problem does not end with the supply of water; it has been estimated that indoor sanita-

tion nearly doubles the consumption of water; collateral provision must therefore be made for the disposal of the water used, whether in the farmhouse, farm cottage, cowshed or dairy. An unsatisfactory solution of this problem would only make confusion worse confounded. One can imagine the reactions of a farmer's wife, who, having tolerated an inadequate supply of well water for many years, suddenly finds herself possessed of an unlimited supply of water on tap with only an out-moded dumb-well or cesspit to carry away the effluent! It is necessary, therefore, that plans for an adequate and efficient system of drainage and sewerage disposal be prepared along with those of water provision.

It is to be hoped that steps will be taken to avoid the enormous waste of nitrogenous matter which is a potential source of valuable manure. It is significant that the more progressive public authorities are taking an interest in suitable composting methods which can make a valuable contribution to agriculture.

Elsewhere in this issue we publish a summary of the discussion on rural water supplies by members of the Royal Sanitary Institute, and we reiterate the hope expressed when commending this to the attention of our readers, that the heavy rains of last autumn will not divert public attention from the recurrent plight of the majority of our rural areas in the matter of provision of an adequate water supply.

In considering preventive medicine on the farm, a most important single factor is an abundant supply of pure water. It is essential both for the maintenance of health and of the control of disease in all animals, human and domestic. Yet there are to-day thousands of farms which have no constant water supply—hundreds upon which milk is produced and to which every gallon of water has to be carried. During periods of drought in recent years many farmers have been compelled to unfence for drinking purposes ponds which were condemned years previously, and during the most important months of the year millions of gallons of milk have been wasted for lack of cooling facilities. Again, it is impossible to fulfil that admirable maxim of carrying the plough round the farm or increasing the total number of head of livestock unless and until water supplies are available in all fields. It is accepted that there are at present tens of thousands of enclosed acres where livestock cannot be grazed because water is not available. In short, 'balanced farming' is impossible without an adequate water supply.

A memorandum is in course of preparation setting out this Association's views on the importance of a pure and ample water supply in relation to the livestock industry, and it is anticipated that this memorandum, if accepted by Council, will be forwarded to the Government departments concerned and other interested bodies.

SCURVY IN CATTLE

Although clinically distinguishable scurvy is not catalogued among the diseases of farm animals, workers of Michigan State College recognised a fatal outbreak as nutritional deficiency in a herd of cattle, which caused the death of 35 cows and calves on one farm. The symptoms were characteristic of human scurvy: interdental papillar, gingival and alveolar lesions, swollen and reddish gums, erosions of the upper and lower dental pad with receding of the gums, lesioned nose and lips (cheilitis), subcutaneous haemorrhages, scaly and rough skin, loss of weight, and fatigue. Plasma assays showed low ascorbic acid values. Likewise, haemoglobin and magnesium values were below normal. The disease responded to the addition of chlorobutanol to the ration.—*J. Dairy Sci.*

CLINICAL COMMUNICATIONS

Cystic Myxo-Chondro-Fibro-Adenoma.

R. F. WALL, M.R.C.V.S.,
Windsor

This case is being recorded because of the spectacular response to the treatment, which may be of some assistance in cases of inoperable growths, and may also suggest a new line of research in the field of neoplasmata.

The patient was a greyhound bitch, about seven years old, retired from racing for the purpose of breeding. For about two years a small nodule in the right inguinal mammary gland had been observed to become slightly active during periods of lactation.

We were called to see her on August 28th, 1944, and found her to be in very poor condition and listless, with staring coat. The temperature was 102·4°. She had a ravenous appetite, consuming enormous quantities of food daily. She was nursing six puppies, four weeks old in conditions anything but hygienic although both mother and puppies were well looked after otherwise. Suspended from the abdominal wall by three thick "cords" and some thinner ones was the tumefied, painful, right posterior mammary gland, measuring approximately 10 in. by 8 in. The anterior aspect was clear of wounds or spots, the posterior presented a circular wound about 2½ in. in diameter, exposing glandular tissue and dirty red glanular areas bathed in a mixture of plum-coloured pus and milk. The right side was marked with purplish patches ½ in. to 1½ in. in diameter, some of which appeared to be about to break down: the left side was much the same otherwise than by the patches being smaller and some exuding pus.

I confess to suspecting carcinomatous cells amongst the mass, and still wonder whether they may have disappeared under treatment, for in the many cases of malignancy (proved by sections) treated by A.P.L. (Antimalignyn) not one died from the disease, and some apparently recovered and lived from two to eight years after treatment ceased. In all the cases the growths separated from the muscular tissues, reduction in size was constant and after removal only in one case did the growth reappear, finally to disappear under medicinal treatment with A.P.L.

This case was given 5 c.c. Antibacsyn on August 28th and a similar dose on the 29th which cleared all evidence of pus and healthy reaction was obvious. On August 31st 2 c.c. of A.P.L. was administered and from then until November 24th the same dose was given twice a week. By the end of the first week she had gained about 6 lb. in weight, the coat had more "bloom" and she was full of life and play, despite the fact that not the slightest change had been made in her living conditions or diet. As she put on weight her appetite diminished until she got back to normal quantity p.d. By the middle of September her weight had increased by over 20 lb., she was in the pink of condition—despite the fact that the puppies were still with her and the tumour, which had had no local treatment other than being wiped off each morning with a solution of household disinfectant that had been applied prior to our treatment. On November 24th the tumour was removed. There is no evidence of recurrence and the bitch is in the best of condition and good spirits.

Zinc Phosphide Poisoning in a Colt*

P. L. INGRAM
(Final Year Student, Royal Veterinary College)

Cases of poisoning in poultry recently reported by Dr. Hare and Mr. Orr show that there is evidence that pest officers are in some circumstances apparently either unaware of the danger to domestic animals arising from zinc phosphide rat-poison, or that they do not take sufficient care in warning owners of such animals of this danger. That this poison is extremely lethal not only to the small animals is demonstrated by the following case.

Subject.—A 14-months-old odd-coloured pony colt in fairly good condition.

History.—The pony was turned out to grass in a small field surrounded by the gardens of private houses. The owner fetched him up at 7 p.m. and gave him a small feed of bran and oats which he ate readily, although it was noticed that the animal was a little sluggish in his gait. He was then turned out for the night in a nearby paddock. Two hours later he was found standing by a haystack with his head hanging down, and when led into a box he immediately "flopped" down and sat resting his head on the ground, groaning slightly.

Symptoms.—The colt was examined at 10.30 p.m. and only with difficulty was he made to rise, while his gait was slow and unsteady. The rate of respiration was increased; temperature 99·2° F.; pulse

* This case is published by kind permission of Mr. J. Berger, M.R.C.V.S., Alderley Edge, Cheshire.

regular but fast—72 per minute. His ears were cold and both they and the tail lacked muscle tone. Mucous membranes were normal, eyes were fairly bright, and pupils normal. There was slight sweating around the base of the ears and under the thorax, while it was so profuse in the inguinal region that perspiration was literally dripping from the scrotum and sheath and running down the inside of the thighs. There was no apparent abdominal pain and no excessive thirst. Faeces were normal in colour and rather soft. Rectal examination showed no abnormality.

Diagnosis.—Condition undiagnosed. It was decided to observe further symptoms which might lead to a diagnosis. In the meantime the colt was rugged-up and later 5 c.c. " Hypophysin " were injected intramuscularly.

Course of Symptoms.—Within 15 minutes he became increasingly unsteady on his feet and finally fell over on to the ground. Coma seemed to increase gradually until he lay flat on his side, eyes practically shut, and respirations becoming more laboured. Slight tetany developed commencing with the facial muscles and extending to the flank and leg muscles.

11 p.m. Temperature 98° F. The eye-protection reflex was still present, the iris was normal and reacted to light.

11.20 p.m. It was thought that death was imminent when the colt plunged into a corner, but he actually lived another hour. Then followed a marked progressive narcosis and stertorous breathing. Heart symptoms predominated shortly afterwards, there being a regular intermittence of six fast beats—followed by a pause of about 10 seconds and then repeated—which were audible five yards away from the colt. This continued for about 15 minutes when the heart beat became almost regular again and inaudible at a distance. Attempts to vomit followed with continuous swallowing, coughing, and choking. Finally respiration in the last ten minutes became similar to that seen in the last stages of hydrocyanic acid poisoning, there being occasional violent gasps with the heart continuing to bound. The colt died at 12.35 a.m.

Post-mortem Examination.—This was made 10 hours later. The stomach showed an area of inflammation about 4 in. in diameter. The main mass of stomach content was normal in colour and appearance, but the material adjacent to the area of inflammation was dissimilar from the remainder. It was a blue-grey in colour, had a granular appearance, and was about the size of one bolus. It emitted a strong odour of acetylene. Apart from slight congestion in the duodenum, the remainder of the alimentary tract was normal. Ecchymoses were present on both the pleura and mesenteric peritoneum. One lung showed hypostatic congestion. The liver was macroscopically normal.

Analysis.—A very extensive and complete analysis of the stomach contents was made. The main mass of the ingesta proved negative for phosphorus, mineral poisons and organic poisons. The second sample, consisting of all the blue-grey material that could be isolated, weighing about 3 oz., was found to contain a quantity of phosphide. One-third grain of unchanged zinc phosphide was isolated, and zinc, equivalent to 7¼ grains of zinc phosphide, was also present. It was subsequently established that rat poison had been set by the local pest officer on the ground over which the colt had been grazing.

SUMMARY

(1) A case of zinc phosphide poisoning in a colt is recorded.

(2) The striking symptom was progressive narcosis.

(3) Death occurred five and a half hours after the initial symptom of slight dullness had been noticed. The time of ingestion of the poison is unfortunately not known.

(4) No trace of phosphide or zinc was found in the main gastric contents. It would thus appear that gastric activity must have been at a minimum between the time of ingestion and death.

(5) Zinc, equivalent to 7¼ grains of zinc phosphide, was found upon analysis of the stomach contents.

DISCUSSION

Zinc phosphide is a rat poison which has been used by official rat-poisoners only within the past few years. The danger of this substance to farm animals has not been recorded until recently and it is suggested that representations should be made to the responsible authority to ensure that such a highly toxic product should be employed with the utmost care.

It is interesting to note from this case that such a small quantity of ingesta can contain sufficient poison to cause death in one of the larger domestic animals.

Zinc phosphide decomposes in water, and more readily in dilute acid, liberating phosphoretted hydrogen, which is extremely toxic. Calcium phosphide exists as a common impurity in carbide, and phosphene emanating from this is largely responsible for the characteristic odour of acetylene. It is for this reason that the odour encountered in the ingesta was mistaken for that of acetylene.

The careful analysis of material from this case was kindly carried out by Mr. J. Butler, B.SC., F.I.C., PH.C., of Bedford Street South, Liverpool.

ABSTRACTS

[Effect of *Br. abortus* Strain 19 on Cattle of Various Ages and Bearing on Adult Cattle. HARING, C. M., and TRAUM, J. (1943.) *Proc. 47th Ann. Meeting, U.S. Livestock Sanitary Ass.*]

This paper discusses the following important points concerned with the use of Strain 19 vaccine.

Relative immunity produced in cattle vaccinated at various ages.—The authors tested the resistance of 41 vaccinated animals, comprising six young calves (4 to 5 months), nine older calves (6 to 8 months) twelve adolescent heifers (9 to 16 months) and 14 sexually mature heifers and cows (16 months to 7 years). In addition 46 non-vaccinated animals were used as controls. The authors' conclusions were that the resistance was apparently greater in animals which were adolescent or mature when vaccinated than in calves vaccinated when younger than nine months.

Relation of age at the time of vaccination to the persistence of agglutinins.—Agglutinins showed a greater tendency to persist in heifers over 16 months when vaccinated than in older cows. Sixty per cent. of animals up to 16 months, when vaccinated, were negative two years after vaccination, and from 90 to 100 per cent., five years after vaccination.

Where adult cattle vaccination is used how long need vaccination be continued?—" Adult vaccination need be practised only during one breeding season, since it can later be limited to calfhood vaccination unless a programme of revaccination is instituted."

The vaccination of reacting cows.—Whilst no appreciable good or apparent harm results from the vaccination of reacting cows, reactors should not be vaccinated if the ultimate aim is a Brucellosis-free herd, because such animals usually continue to react for several years whereas unvaccinated reactors not infrequently recover and become negative.

The vaccination of adult cattle in Brucellosis-free herds.—Although the vaccination of pregnant cows after the fourth month of gestation has, in rare instances, caused abortion, associated non-vaccinated cattle have not become infected with Strain 19. If care is used to avoid injecting cows after the fourth month of pregnancy the abortions resulting from the vaccine will be negligible, compared to those occurring in unvaccinated herds. Some temporary reduction of the milk yield may occur in lactating cattle when vaccinated.

The authors conclude by saying that whilst Strain 19 is far from being an ideal vaccine, it is the only product that has given any degree of satisfaction.

G. D.

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[The Effect of Phenothiazine on Horses. SWANSON, L. E. (1944.) *Amer. vet. med. Ass.* **105.** 134.]

The author reports on the treatment of 68 horses with small doses of phenothiazine mixed with the feed and their effect on the egg counts of the nematode parasites, on the volume of packed red blood cells and on bots.

The horses were stable-fed, except for a short summer period on pasture. They had access to salt, but to no other minerals, while they were in the stables. Faecal examination revealed " a heavy parasitic burden ". Each of 65 of the horses was given 30 grammes phenothiazine (about 0·06 gramme per kg. live weight) mixed with 2 qt. of wet oats after withholding feed for 18 hours. Three private mounts received 50 grammes phenothiazine in the same way. Egg counts were made by the Stoll technique (Stoll, N. R. (1930.) *Parasitology.* **22.** 116) from samples taken direct from the rectum. The volume of packed erythrocytes was estimated by the Wintrobe haematocrit method. Blood and faeces were examined immediately before treatment and on the seventh, 15th and 54th days after treatment. Two horses were autopsied 25 days after treatment. All the horses had eaten the medicated feed in two hours, except ten of them, which had not eaten it 35 hours later, but ate it after wet bran was added. There were no unusual reactions after treatment. The horses were worked on the third day after it and seemed more alert than before it. By the 54th day many had gained weight, had brighter coats and showed general improvement. The average number of eggs per gramme of faeces from the 65 horses given 30 grammes of phenothiazine was 849·6 before treatment; on the seventh day after treatment it was 5·4, but eggs were detected in only 20 of the 65 horses, 45 being negative; by the 15th day it was 6·4, but eggs were found in only 32 horses, 33 being negative; by the 54th day after treatment it was nil. The dose of 50 grammes given to the three other horses was not more effective than the 30 grammes. The average number of eggs per gramme of faeces from these three horses before treatment was 493; on the seventh day after treatment it was two, eggs being found in only one horse; on the 15th day it was two, eggs being found in only two horses; on the 54th day it was nil.

Most horses showed a slight decrease in the volume of packed erythrocytes on the seventh day after treatment; this was present in some of them also on the 15th day; but on the 54th day the volume was equal to or higher than it was before treatment.

The treatment was not effective against bots.

G. L.

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[Massive Acute Necrosis of the Liver; its Significance and Experimental Production. Glynn, L. E., and Himsworth, H. P. (1944.) *J. Path. Bact.* **56**. 297-305.]

A preliminary account of this work has already appeared (*Lancet*. (1944.) (*i*) 457). Rats were fed a diet deficient in protein and it was found that necrosis of the liver appeared as early as the 30th day in some animals and was always present to some extent by the 100th day. There was a close relationship between protein intake and the development of necrosis in that the incidence and severity of the lesions were correlated with the degree of protein deficiency. That the quality of the protein is important was shown by the observation that casein in quite small doses afforded complete protection whereas yeast protein failed to protect even when forming 16 per cent. of the diet. Further work showed that the amino acid methionine, present in casein, afforded complete protection from liver necrosis. In order to ensure that infective agents were not responsible for the necrotic lesions the liver tissue was examined for the presence of bacteria and viruses: the results were negative.

The early lesions closely resemble "acute yellow atrophy" in man—the liver is swollen and friable, the background is yellow and petechial haemorrhages are common, and histologically there is seen massive necrosis of groups of liver lobules. At a later stage the lesions are essentially those of "subacute red atrophy" in man—the liver is no longer swollen and the necrotic areas are depressed below the surface, there are no petechiae, and the necrotic cells have been removed and replaced by poorly vascularised granulation tissue. The final stage shows a deeply scarred liver, often distorted into fantastic shape and showing nodular projections: the histological features of this stage are bile duct proliferation, fibrosis of the granulation tissue, and hyperplasia of the surviving liver cells. This final stage of the process is often accompanied by wasting, anasarca and ascites. Jaundice may occur at any stage.

The necrotic syndrome induced by protein deficiency differs from that caused by liver poisons (*e.g.*, chloroform, carbon tetrachloride, phosphorus, bacterial toxins) in that the necrotic changes develop only after a long latent period, they do not affect the liver uniformly throughout, and complete restitution of the liver does not occur unless the damage has been only very slight. Immediate acute zonal necrosis is caused by the action of an extrahepatic "toxin"; delayed acute massive necrosis seems to be due to a process generated within the liver cells themselves as a result of nutritional deficiency. The terms "toxipathic" and "trophopathic" hepatitis are suggested to mark this distinction.

[The importance of these findings in human pathology is obvious. To what extent an analogous condition occurs in animals remains to be seen, but it is clear that in cases of liver necrosis or its end result (nodular hyperplasia) the possible significance of nutritional factors will have to be considered.]

E. G. W.

"MAINTENANCE" FEEDS FOR FARM HORSES

For the idle horse in winter or for one that merely requires what may be termed a maintenance ration, the authorities of the Dominion Department of Agriculture, Ottawa, Canada, recommend that for every 100 lb. of the horse's weight, 1 lb. of mixed hay, 1 lb. of clean oat straw, and 1 lb. of turnips should be fed. To this might be added a small feed daily of bran and oats in equal parts.

Other rations which have been found satisfactory are:—

No. 1, Grain composed of three parts oats and one part barley.

No. 2, Grain mixture of oats, three parts; and corn, one part.

No. 3, Grain mixture of oats, ten parts; bran, two parts; oilmeal, one part and hay with rations.

No. 4, Grain mixture of oats, three parts; bran, one part, fed with two green-cured oat sheaves, and a limited amount of straw. This is a ration particularly adapted to horses on very light winter work or idle horses in the western provinces.

No. 5, Grain mixture of oats, two parts; corn, two parts; and bran, two parts. To this may be added linseed oilmeal, one part, or 2 lb. of molasses daily if the horse is not inclined to relish the grain or is in a low condition.—*Scottish Farmer*.

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Sir William Angliss, one of the leading Australian meat authorities, estimates the losses of sheep resulting from the two years' drought at 6,000,000 of the Commonwealth's total of 125,000,000, and the losses of cattle at several hundred thousands.

IN PARLIAMENT

The Water Bill

In the House of Commons on Wednesday of last week, Mr. Willink, Minister of Health, moving the second reading of the Water Bill, said that it followed closely the proposals of Part I of the White Paper issued last year. This Bill was concerned with the conservation and better utilisation of the country's water resources and the improvement of administration.

The first object of the Bill, in view of the untidiness and unsatisfactory situation regarding enactments about water, was to fit a general comprehensive code of law into a general Act. There had developed in this country two main types of water undertakings—local authorities and companies which operated under special Acts and those undertakings which operated under the provisions of the Public Health Act. The second feature of the Bill were the provisions to deal with that situation. There were clauses which enabled special Act undertakings to do, with the Minister's consent, things which the Public Health Act undertakings could already do with Ministerial consent and without the need for special legislation. The Bill gave the Minister certain additional default powers. There were also new powers to enable the Minister and undertakings to fulfil various new obligations. They were designed to safeguard our water resources, to secure their proper use, and extend the benefits of a piped water supply. There was to be a tightening up of the powers against the waste, misuse, or pollution of water. New powers were given regarding water supplies for industry, agriculture, and other non-domestic users.

Certain provisions of the Rural Water Supplies Act, 1944, were proposed to be made general. Clauses 29 and 30 of this Bill were designed to secure that as pipe water supplies were extended the work was not stultified by the failure to connect up houses to those pipe supplies. The Central Advisory Water Committee, which had done good work in the past, was now to become a statutory body. The Government considered that this committee, broadly based and widely representative, was indispensable, and they proposed to make very full use of its knowledge and experience. The committee would be given power to make recommendations and give advice on their own initiative. In this important service of water supply three things were necessary—more integration, more flexibility, and, beyond all, more informed planning. There were still one-third of the houses in our countryside without a pipe water supply.

Mr. A. G. Walkden: This Bill dealt mainly with the question of supply and he regretted that no legislation was before the House dealing with Part II of the National Water Policy. He was also sorry that there was to be divided authority in this matter between the Ministry of Health and the Ministry of Agriculture. There should be one supreme authority—a national water commission possessing the power to act continuously. Not only was the Minister retaining existing agencies, many of which were quite undesirable, but he was arranging to strengthen their position and fatten their finances. This was a poor, halting, feeble type of Bill and nothing like the comprehensive measure which ought to have been brought forward to meet the tasks of the future.

Mr. Butcher: This was a good and useful Bill, but its backbone needed strengthening. He regretted that a measure dealing with drainage had not been introduced at the same time. Mr. Lawson said that the Bill would remain a Bill of good intentions unless the Government were prepared to face the financial problems, and make the cost of supply a national charge instead of a charge on local rates.

Mr. R. C. Morrison welcomed the Bill because it gave some measure of national control. Only an idiot would oppose the planned development of the nation's water resources. The Bill should be considered by a joint committee of Lords and Commons.

Mr. Clement Davies said that people were leaving the countryside because of the lack of amenities and even the common decencies of life. This Bill provided for a minimum of change. What was needed was a national survey and proper planning area by area, without placing too great a financial burden on the individual areas. Major York regarded the Bill as an important step forward in establishing the right of rural areas to have a proper water supply. Mr. Granville said that the Minister should withdraw the Bill and introduce a comprehensive measure of planning, which would guarantee a pure service for rural England. Mr. Bartlett said that far too little attention was paid to the preservation of the natural beauties and amenities. There should be provision for the Ministry of Town and Country Planning to be represented on the Central Advisory Water Committee. Mr. Hutchinson said that the water undertakers were in general agreement with the Bill. The Minister of Town and Country Planning should be made responsible for water policy. He supported the suggestion that the Bill should be referred to a joint committee of both Houses. Mr. McEntee: This could not be called a national Bill. If a

scheme was to be really national it should give to all the people light and power, a sewage system, and a water supply. Mr. DE CHAIR said it would have been a disgrace if this Parliament had reached the end of its life without dealing in a comprehensive fashion with water supplies, particularly in the rural areas.

Miss HORSBRUGH, Parliamentary Secretary to the Ministry of Health, said that sweeping powers were, in fact, proposed. The Minister would have power to amalgamate undertakings which failed to do the job. She did not think it would be a good thing to have a Minister specially charged with responsibility for the work under the Bill. The Bill did not alter the position as regards planning control.

The Bill was read a second time, and the necessary money resolution was agreed to in Committee.

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Questions

FOOT-AND-MOUTH DISEASE

Major BRAITHWAITE asked the Minister of Agriculture, in view of the fact that the principal source of infection causing outbreaks of foot-and-mouth disease in this country is imported meat, and in order to provide guarantees against the sale of such diseased meat to the public, in addition to safeguarding our flocks and herds from slaughter, with consequent heavy expenditure on compensation, whether he is prepared to undertake, after giving due warning, that in future the import of meat will be prohibited from any country which has not taken satisfactory steps to eradicate this disease.

Mr. HUDSON: I have consulted my right hon. Friends the Minister of Health and the Minister of Food on this matter. I am advised that there is no evidence of danger to human health from the importation into this country of carcases from countries in which foot-and-mouth disease occurs, though there is a serious danger to our own farm animals if they are allowed to come into contact with meat which may be infected. There would be difficulty about adopting the course proposed in the Question at present.

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BRITISH EMBASSIES (SCIENTIFIC AND TECHNICAL ADVISERS)

Colonel LYONS asked the Secretary of State for Foreign Affairs whether he will consider the advisability of adding a trained scientist to the staff of commercial councillors or attachés in selected embassies overseas to travel, observe and report to the appropriate Government Department the evolution of all new experiments.

Mr. GEORGE HALL: It is desirable that information about scientific developments in other countries should be readily available to the appropriate British authorities and interests, and my right hon. Friend is prepared to consider the attachment to His Majesty's Missions of specially qualified scientific and technical advisers when this appears to be in the national interest. In many cases, however, it may prove that the most satisfactory means of attaining our objective is by direct contact between individual scientists, groups of scientists, or business interests, assisted where necessary by the regular members of His Majesty's Missions.

CONTROL OF THE POULTRY INDUSTRY

"Dr. V. E. Wilkins, head of the Ministry of Agriculture poultry division, foresees the control of the poultry industry ultimately in the hands of a Commission," states the *Farmers' Weekly* in a recent issue, and continues: "Replying to a question at the annual meeting of the Accredited Poultry Breeders' Federation, in London, he said that he was aware that there was some objection to centralised control from Whitehall, but he regarded this as an interim measure only, which would pave the way to control of the industry by a Commission.

"Mr. Percy Francis, Vice-Chairman of the newly appointed Advisory Committee, said that he hoped the Committee would be capable of bringing greater unity to the industry and more people into the field of accreditation who, at present, were still outside. He was particularly aware of the large number of suppliers to the commercial hatcheries which would have to be brought into accreditation. It was envisaged that local committees would be established to assist in the administration of the scheme in the counties. This, in conjunction with the new Advisory Committee, would be the machinery by which all cases would be considered both locally and at headquarters with the breeders' own representatives present.

"The annual report of the Council shows that the 1944 official register of accredited poultry breeding stations has a total of 1,459 breeders. There was a further 610 on probation for accreditation in England and Wales. The paid up membership of the Federation at the close of the year amounted to 1,226, but it is anticipated that the figure of 1,300 will be exceeded when all receipts are received. This will show an increase of 550 over 1943."

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Mar. 3rd.—Meeting of the Nutrition Society (Scottish Group), Royal (Dick) Veterinary College, Edinburgh, 10.30 a.m. (Subject: "Problems of Stock Feeding.")
Mar. 8th.—Annual General Meeting of the South-Eastern Division, N.V.M.A., at Maidstone (Royal Star Hotel), 2.30 p.m.
Mar. 9th.—Meeting of the Dumfries and Galloway Division, N.V.M.A., at Carlisle (Crown and Mitre Hotel), 2 p.m.
Mar. 13th.—Annual General Meeting of the Eastern Counties Division, N.V.M.A., at Norwich (Royal Hotel), 2 p.m.
Mar. 14th.—Annual General Meeting of the Western Counties Division, N.V.M.A., at Exeter (Guildhall), 2 p.m.
Mar. 14th.—Meeting of the West of Scotland Division, N.V.M.A., at Glasgow (North British Station Hotel), 2.30 p.m.
Mar. 17th.—Meeting of the Society of Women Veterinary Surgeons, 69, Great Peter Street, Westminster, S.W.1, 2.15 p.m.
April 1st.—R.C.V.S. Annual Fees due.
April 11th.—R.C.V.S. Committee Meetings.
April 12th.—R.C.V.S. Committee and Council Meetings.
May 8th.—R.C.V.S. Council Elections—last day for nominations.
May 22nd.—R.C.V.S. Council Election—Voting Papers issued.
May 29th.—R.C.V.S. Council Election—Voting Papers to be returned.
June 5th.—R.C.V.S. Annual General Meeting.
June 6th.—R.C.V.S. Committee and Council Meetings.

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R.C.V.S. Council Election, June, 1945

The following additional nominations have been made: Mr. Esmond Brown (Bath), Mrs. B. L. Everett (Farnham), Dr. W. S. Gordon (Compton, Berks) and Dr. R. F. Montgomerie (Beckenham).

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R.C.V.S. OBITUARY

KING, Herbert, 77, Kennings Way, London, S.E.11, and 23, Woodfield Avenue, Streatham. Graduated London, March 24th, 1887. Died February 25th, 1945; aged 78 years.

KING, William Samuel, M.B.E., 264, Burdett Road, Limehouse, E.14. Graduated Edinburgh, July 5th, 1900. Died February 26th, 1945; aged 65 years.

Mr. Herbert King, M.R.C.V.S.

We deeply regret to record that Mr. Herbert King, of Kennington, passed away on Sunday last following a cerebral haemorrhage. It was but on the preceding Friday that he was taken seriously ill, having attended the surgery, in his usual health and in good spirits, earlier in the week.

In the death of Herbert King there is severed a strong and much valued link with the great days of horse practice in South London. He was one of the soundest of our horse clinicians, with outstanding ability in diagnosis, and his zeal and interest in his work played their full part in making the name of Price and King—he was the son-in-law and partner of Salusbury Price—renowned in veterinary and horse-owning circles in the days when the hospital stables at Brixton were filled with their quota of 80 horses.

The affectionate esteem in which Mr. Herbert King was held is well exemplified, in the writer's memory, by the readiness of the Central Veterinary Society to honour one of its most loyal members with the Presidency. Though a diffidence which, in his case, was allied to a true modesty, forbade acceptance, the support of his attendance was unfailing, both at the meetings of the Society and at the annual gatherings of the N.V.M.A. Outside his professional work and its associated activities, Mr. King's best-loved hobby—like that of many another Kennington-born man—was cricket. In his younger days an excellent player, as the years wore on he followed the fortunes of the Surrey team with unremitting interest—one might well say devotion—and his fellow members of the County Club knew well the particular seat on which invariably he might be found. He was also an enthusiastic gardener.

Mr. King was the head of one of those "veterinary families" which are a happy feature of our profession. Mrs. King and Mrs. G. H. Wooldridge are both daughters of the late Salusbury Price. One son, Mr. Cyril King, is in the Kennington partnership, while Mr. Nevill King practises at Leatherhead. To all thus bereaved is extended the deep sympathy of their many friends in the profession.

The funeral took place privately at Putney Vale Cemetery on Thursday. It was Mr. King's expressed wish that, in lieu of floral tributes, donations should be sent to the Victoria Veterinary Benevolent Fund.

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Mr. W. S. King, M.B.E., M.R.C.V.S.

It is a tragic coincidence, although they were unrelated, that another well-known bearer of the surname—also representing a link with the "golden age" of horse practice—Mr. William Samuel King, of Limehouse, E., was found dead in bed at the Waldorf Hotel on the morning of Monday, February 26th, the day following the death of Mr. Herbert King. He, too, was an esteemed member of the Central Veterinary Society with a very extensive equine practice, being also well known in the show world as an expert judge of the cart-horse, as he was also of greyhounds. Mr. W. S. King always resided during the week at the Waldorf, but had been somewhat indisposed before he left his home at Eastbourne after the week-end. Much sympathy is felt for Mrs. King, her daughter and two sons, in their loss. We hope to publish, in an early issue, fuller reference to Mr. King, who was a member of the Council of the Royal College from 1921 to 1930. He was awarded the M.B.E. for his services during the last war as a civilian veterinary surgeon in the London District.

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GENERAL OBITUARY

Dr. F. W. Eurich

The death has occurred in Hampshire of Dr. Frederick William Eurich, whose research work into the cause and treatment of anthrax was widely recognised. Hon. Consulting Physician and Hon. Consulting Pathologist to Bradford Royal Infirmary and other hospitals from 1908 to 1932, he was Professor of Forensic Medicine at Leeds University. It was largely due to his efforts to isolate the anthrax bacillus that the Government Disinfecting Station was set up at Liverpool. He was subsequently appointed bacteriologist to the Bradford Anthrax Investigation Board—set up in 1905—and Specialist Medical Referee to the Home Office for anthrax, aniline and lead poisoning. His services to the industry received tangible recognition in 1937, when, on his retirement, he was awarded the Textile Institute's Gold Medal—the first recipient who had not been actively concerned in the internal organisation of the Institute.

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THE CONTINUED "CALL UP" OF VETERINARY SURGEONS

A Farming Comment

Under the heading "More Trials for Stock-breeders," the *Farmer and Stock-Breeder*, in its issue of February 20th, observes: "After five and a half years of makeshift, adaptation and difficulty, stock-breeders find their burdens lately increased as the result of further calls necessitated by the prospective concentration of our war effort. Veterinary surgeons, young men often working as junior partners, are still being called up for professional service with the Forces. This in itself entails hardship on the individual breeder and—much more important—threatens the success of the Panel Scheme launched with such hopes.

"Four diseases alone deprive the nation of about 50 million gallons* of milk a year. The Panel Scheme provides reasonably effective means for control of those diseases through the close co-operation of farmer and veterinary surgeon. To ensure its proper working, quarterly visits by a veterinary surgeon familiar with the conditions are desirable, if not essential, and it is to be regretted that the new demands are affecting this class of veterinary surgeon seriously in several counties and the health of many thousand head of cattle is consequently imperilled. At the end of last year there were 274,457 in-milk cows and heifers under the scheme, representing just over 11 per cent. of the country's total.

"Veterinarians responded with such alacrity in the early days of the war that a shortage in the ranks of those remaining led to considerable hardship and loss. This further reduction of their numbers comes at the most unfortunate moment, when the Panel Scheme is growing in popularity.

"If due regard has been paid to the risks involved to the Scheme as a whole, breeders will submit to this further hardship as inevitable. But it is contended in some quarters that the Ministry has not argued its case with effectiveness. Breeders may be excused for fearing that when the nation's peril is over and the veterinary surgeons come back, the old cries of inefficiency and of slackness will be hurled at the dairy farmer if—as well may be—there is any marked increase in preventible animal disease. Officials and public have often short memories. As an industry we have made many sacrifices, and will continue to do so if the call is shared fairly by all countries."

* The figure arrived at by the Survey Committee of the N.V.M.A. as representing the annual loss of milk arising from the four major diseases of cattle was of course 200 million gallons, and not 50 million gallons. The latter figure was chosen by the Ministry for the purposes of official publicity connected with the inauguration of the Survey Scheme.

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BRITISH SOCIETY OF ANIMAL PRODUCTION

At a general meeting of the Society held on February 21st at the London School of Hygiene and Tropical Medicine, the following were elected for the forthcoming year: President, Professor R. G. White; Vice-President, Professor J. A. Scott Watson; Members of Committee, Professor Wm. C. Miller, Dr. A. B. Fowler, Messrs. Alec Hobson, E. C. J. Allday, A. R. Wannop, Moses Griffith, J. R. Currie, and T. L. Bywater; Secretary-Treasurer, Dr. J. E. Nichols.

A report of the discussion on "Meat" will be published in *The Veterinary Record* in the near future.

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MARKETS AND THE SPREAD OF DISEASE

The view that marketing methods are responsible to a great extent for the spread of disease in cattle was expressed, says the *Farmers' Weekly*, when Cheshire farmers, at a meeting arranged by the W.A.E.C. and the Chester N.F.U. discussed a livestock improvement policy. Mr. R. Roberts (Barrow Old Farm) said: "We see good cattle bought in Scotland and Wales and taken by dealers to one market after another. I have known cattle to be passed through five auctions in 14 days. They may stand next to beasts infected with mastitis, or other disease, and they are milked by one person after another—a sure way of spreading trouble. I think one of the roots of mastitis lies in dealers' shippons—you see scores of cattle tied there between markets—cows and heifers milked together by the same machine worked often by irresponsible boys. So long as we have auctions and dealers we shall have trouble. It would pay us to sell a little less milk and rear our own stock."

Mr. H. McFadzean, the Cheshire W.A.E.C. Husbandry Officer, said the difficulty in complying with Mr. Roberts' suggestion was that there were so many small farms in the county where, if they reduced the adult stock to make way for rearing, there would not be enough income. He agreed that so long as there were markets there would be disease. Heifers should go from the farms where they were reared to the farms they were destined for, and not into markets. Even the calving heifers were milked by all and sundry at the markets.

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ADDRESSES OF DISEASE-INFECTED PREMISES

Foot-and-Mouth Disease: Aldwark Gardens, Parkgate, Rotherham, 43, Church Street, Rawmarsh, Rotherham, and The Old Weighing Office, New Kimberworth, Rotherham, Yorks., W.R. (Feb. 18th); Holly Berry Farm, Hooton Roberts, Rotherham (Feb. 19th); Highfields Farm, West Melton, Rotherham (Feb. 20th); New House Farm, Dalton Parva, Rotherham (Feb. 21st); 6, Stanton Road, Forest Hill, Oxford (Feb. 22nd); 15, Silver Street, Llanfaes, Brecon; Bayswater Millhouse, Headington, Oxford (Feb. 24th).

Swine Fever: Ship Inn Farm, Crantock, Newquay, Cornwall; Yearby, Redcar, Yorks, N.R.; Park Farm, Haxby Road, York; H.O.M.C.O. Allotments, Leads Road, Stoneferry, Hull (Feb. 19th); Chynoweth, Carn Brae, Redruth, Cornwall; 4, Orchard Vale, Midsomer Norton, Bath, Somerset; Ruddles Lane, Wyton, St. Ives, Hunts.; No. 6 Holding, 183, Blairtummock Road, Glasgow; Modrydd Farm, Modrydd, Brecon, N. Wales (Feb. 20th); 16, Bridge Street, Llanfaes, Brecon; 61, Cinder Bank, Netherton, Dudley; Watersplash Lane, Heston, Middlesex; Sampson's Hall, Kersey, Hadleigh, Suffolk (Feb. 21st); The Gardens, Canal Bank, Brecon; Wennington Sand and Ballast Pits, Aveley, Essex; Surrey County Council Mental Hospital Farm, Brookwood, Woking, Surrey (Feb. 22nd); Woodlands, Dyce, Aberdeen; Skippet Farm, Warmwell, Dorchester, Dorset (Feb. 23rd); The Green, Beyton, Bury St. Edmunds, Suffolk; The Stores, Beyton, Bury St. Edmunds; White House, Wells, Norfolk (Feb. 24th); Trevemper Bridge, Newquay, Cornwall; 90, Park Lane Allotments, Guisborough, Yorks. (Feb. 26th).

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MEDICAL EDUCATION AND RESEARCH

"The Power of the Purse"

Under the above sub-heading *The British Medical Journal*, in the course of its comment on the reply given by the Minister of Health in the House of Commons on January 18th to a question on the Goodenough Report on Medical Education* (*Vet. Rec.* **57**. 39.), expresses alarm at "what seems to be an attempt by the

* With particular reference to increased grants for the purposes of medical education and research to be distributed by the University Grants Committee through the universities to medical schools, post-graduate schools and institutes, and hospitals used for teaching and research.

Minister to arrogate to himself powers belonging constitutionally to another body," using " the threat of the purse " to enforce his claim. Quoting Mr. Willink, " The Government attach equal importance " (to adoption of the principle that the medical schools should accept ' a reasonable proportion ' of students of both sexes) " to the revision of the medical curriculum, and acceptance of the principle of increased grants for medical education and research is dependent on the early completion of this process." The *Journal* proceeds: " Having delivered this edict, Mr. Willink adds that the Government is ' glad to learn that, as recommended by the (Good-enough) Committee, the G.M.C. has already taken the initiative in the matter.' Unless we have misread this statement of Government policy it appears that, through its Ministry of Health, the Government is doing two things. It is first of all threatening to withhold money from medical schools, who are not responsible for revising the medical curriculum, unless the curriculum is revised by licensing bodies, who are responsible for any such revision (it insists on ' early completion '). The Government is, in fact, using the power of the purse to coerce those responsible for teaching medical students. Secondly, it is abrogating the functions of the G.M.C. and, by implication, is questioning its efficiency in maintaining standards of medical education.

" The Goodenough report is a significant, if rather verbose, contribution to the subject of medical education. The Royal College of Physicians recently published an equally authoritative and more succinct report on the same subject. The B.M.A., too, was early in the field, with a sane pronouncement on the eternal theme of medical education. From these and other sources those responsible for medical education will seek inspiration and will weigh in the balance the findings and recommendations of the Goodenough as of other committees. But is it the intention of the Ministry of Health to try to enforce revision of the curriculum on the strength of the conclusions reached by a committee of its own choosing? And is it to do this by the rather vulgar trick of withholding money meant for education and research? Has the Minister of Health forgotten that the responsibility for maintaining standards of medical education lies with the General Council of Medical Education and Registration, to give the G.M.C. its full title? The G.M.C. is a statutory body set up by the Medical Act of 1858. It maintains standards of medical education by indicating to licensing bodies in the form of recommendations what it will regard as an adequate minimum curriculum, and by satisfying itself, through enquiry, visitation and inspection, that no particular curriculum is in this sense inadequate. If it is not so satisfied it may make representations to the Privy Council, which, on review of all the evidence, may suspend the right of a licensing body to qualify men to practise. This provides a check to hasty and ill-considered action. If the G.M.C. defaults in its duties the Privy Council may require it to mend its ways, and indeed may exercise the powers of the G.M.C. if it does not do so. There seems to be no call for this latest intervention of the Ministry of Health in a matter in which the constitutional responsibility of ' the Government ' has rested primarily, ever since a *Medical Register* was first compiled, with the Lord President of the Council as the Ministerial head of the Privy Council Office."

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RURAL WATER SUPPLIES

Probably the worst disservice of a drenching autumn was to divert public—though it is to be hoped, not political—attention from the recurrent plight of the majority of our rural areas in the matter of the provision of an adequate water supply, so vital to milk production. With legislation in the offing, however, we turned with interest to the report which has reached us of a recent discussion of this subject, by members of the Royal Sanitary Institute, at Haywards Heath.

" Unfortunately for the technicians," said Mr. W. H. Ashmole, " human nature is almost incurably clannish and in the case of water supplies the parish pump has produced the ' Parish Pump ' type of policy, and whilst we more or less contentedly accept National bread, utility clothes, and pool petrol, we strenuously oppose any attempt to merge our little water interests into a larger and less parochial scheme. Development of the water industry up to now has produced a state of affairs which, broadly speaking, can be stated to be that the bulk of the water in the country is in the hands of the mainly urban authorities with the high rate incomes who derive their water generally from sources outside their own urban areas, with the small rural areas having to come to these authorities cap in hand to ask for such water as may be to spare. When the rural areas have obtained such water at whatever price is demanded, it then costs three or four times as much to distribute as in the urban areas owing to the low rateable value per yard of main. It appears to be agreed on nearly all sides that there are at present far too many separate and self-contained water authorities. That being the case, it would seem that immediate and determined efforts to reduce that number should be made, solely for the reason that it is admitted that there would be a definite gain in overall efficiency.

The White Paper

" It is at this point that the White Paper on Water Policy comes into view. While boldly admitting the desirability of reducing the number of authorities, especially the smaller ones, and proposing to give the Ministry of Health the power to compel the union of authorities, this power is immediately qualified by the proviso that such power can be used only when the performance of any individual authority falls below a reasonable standard. It is suggested that therein lies the snag. Any water authority, however favourably it might view the question of amalgamation with another, would certainly fight most strenuously against the suggestion that its performance was below the reasonable standard, and we are inclined to believe that to prove such default would turn out to be such a difficult and invidious task that the Minister would eventually prefer to let things be as they are. Surely if the amalgamation of smaller authorities is a desirable thing in order to improve service to the consumer and general efficiency, the Minister, acting on advice from the Joint Advisory Committee, should have the power to enforce such amalgamation without the necessity of proving that something is radically wrong with one of the parties to the union. Therefore, in our opinion, the proviso about falling below a reasonable standard should be omitted. At the same time, there should be adopted a definite policy of gradually linking up the rural areas with the larger urban centres resulting in a smaller number of water undertakings, each of a reasonable size, and each with a balanced urban and rural population. In this way the amenities of the town would be shared by the surrounding country on which the town is dependent for its food, its market, and its very life.

" With regard to the rest of the White Paper, it is felt that on the whole the Government is to be congratulated on its outlined policy as far as it goes, but does it go far enough? We have here the extraordinary position of the water industry itself as represented by the British Waterworks Association and the Institution of Water Engineers promulgating schemes and plans for the reform of its own house which are considerably more courageous and downright than the Government's own proposals. Here we have the water authorities prepared and willing to be rationalised and reformed, and asking for a greater measure of central, *i.e.*, Government, control and an unwilling or bashful Government shyly giving the Minister of Health a few more powers which he will find very difficult to exercise, and endowing with statutory powers those rather ill-defined bodies, the Regional Advisory Water Committees. It is not enough. The actual constitution and duties of the Regional Advisory Committees will need a tremendous amount of thrashing out, a process which will be probably lengthy and possibly bitter, before statutory powers dare be granted.

Rural Water Supplies Act

" As to the Rural Water Supplies Act, the phrase ' as far as it goes ' again seems to apply. Granted that the principle of Exchequer grants towards rural schemes is sound, why should the arbitrary limit of £15,000,000 or any other sum be imposed? Surely each case should be examined on its merits and such grant be made as may be necessary whether the 15 million pounds has been used up or not. Would it not be better to remove the limiting figure and give grants to all cases proved by adequate enquiry to be necessitous? There appears to be no reason why the Government should not fix some figure which it considers to be the maximum desirable rate of water charges, bearing in mind all the relevant conditions of the particular undertaking, and making grants only in those cases where the new works would raise the charges above the permitted maximum. This would eventually have the effect of levelling out the water charges over most of the country—a highly desirable result. Another minor criticism of the Act is that the proposal to enforce the spreading of the cost of rural water schemes by a general rate and the abolition of special rates for this purpose needs certain modifications, to allow for anomalous cases. Apart from these points, the Bill appears to be very necessary and overdue. The sections dealing with guarantees by local authorities to water undertakings puts forward a system which has been tried some time ago by our own authorities and has proved entirely satisfactory all round.

" Coming down from the general problem to the particular and practical problems of rural supplies, it would seem that rather too many areas are still without piped water owing to the great length of main required to connect them with the nearest distribution system, and the impossibility of finding underground sources for wells or boreholes. Too many have given up hope of providing water locally when wells, boreholes or springs are not possible. Too many have assumed that the local river or stream is not a practicable source for any but the largest authorities, possessing laboratories, to make use of."

Agricultural Needs

Mr. F. G. Jones, of Cuckfield, reminded his hearers that for three million people living in rural England and Wales the source of water is from wells and springs. The need for the provision of a piped water supply, wholesome and adequate for all purposes in rural areas, must be divided into two categories—agricultural and domestic.

"Regarding agricultural needs, and in particular milk production, the problem of the quality and quantity of the water supply is one of paramount importance. When considering polluted sources, one must always remember the variety of ways in which water is used in milk production, and the risk of infection from utensils, equipment, teats and udders of cows and the hands of the milkers. The type of infection depends upon the source of pollution and perhaps the gravest risk is that from defective house drainage, although pollution by animals and farm drainage is also a vital factor. In addition to this risk, water from the same source is being used for the watering of cattle with the danger of the spread of disease in the herd.

"Whilst polluted water supplies are always a danger to public health, inadequacy of supply is of almost equal importance, for no sooner does the supply appear to be failing than the producer immediately cuts consumption, and one of the first actions is to restrict, if not completely stop, cooling of the milk. In addition, the preparation of the cows for milking does not receive the usual care, thus contributing towards the production of an article of reduced keeping quality with consequent loss to both consumer and producer. Moreover, chronic mastitis, which results in the deterioration of the quality and quantity of the milk given, is spread by means of the hands of the milkers, and inadequate washing down of the cowstall is a contributory factor in the spread of tuberculosis in the animals using the stall.

"Restricted water supply for cattle also results in a reduced milk yield, *e.g.*, at one farm within my area, for three days it was impossible to convey water to the field for a herd of 16 cows, with the result that the recorded yield of milk dropped from 34 to 26 gallons per day.

"During periods of water shortage, many farms have to resort to carting water at great inconvenience, entailing the use of either a tractor or horse and provision of labour, with the added danger of contamination of the water during transit, storage and distribution.

"Even when the conditions on a farm as regards cows, cowsheds, equipment and methods of production are of the highest order, the existence of a polluted supply or the inadequacy of one that is wholesome will prevent the farmer from obtaining a designated licence. This single factor will thus deprive him of the possibility of increased revenue and the consumer of a higher class commodity.

"Two surveys of the water supplies to all dairy farms in the Cuckfield Rural District have been carried out. That carried out in 1937 gave the position briefly as follows: Of 261 farms, 168 obtained water from a public main, 41 from wells and springs, which upon analysis were found to be satisfactory. The remaining 52 farms had polluted private supplies. Due to the fact that the only remedy for a number of these farms was the provision of a supply necessitating extension of mains, it was not until 1939 that all dairy farms were provided with a satisfactory supply. The second survey carried out in 1943 revealed 12 farms with unfit supplies, all of which have since been remedied. This result illustrates the need for constant supervision and sampling.

"It is noted in the White Paper that the Government proposes that water undertakings shall be placed under an obligation to supply water for agricultural purposes on reasonable terms and conditions, provided this can be done without endangering the normal domestic supply, any question as to reasonableness of terms and conditions or of a refusal to supply being determined by the Minister. The point at issue still remains—who is going to bear the cost of extending mains to the many farms and farm cottages, which are invariably situated some considerable distance from the villages? It would appear that the responsibility for the cottages rests on the local authority, but only if the cost is 'reasonable.' It is hoped that a generous interpretation will be given to this vexed word. The arrangements for help in the form of grants from the Ministry of Agriculture under Section 5 of the Agriculture (Miscellaneous Provisions) Act, 1944, will materially assist in the provision of water from private supplies to those isolated farmhouses and cottages, and it is hoped that it will be a piped supply, providing facilities for a continuation of the scheme for the laying on of water to fields and buildings."

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CATTLE MORTALITY AND MALNUTRITION

Plea for Immediate Increase in Feeding-stuffs

At a recent meeting of the Executive Committee of the Somerset Farmers' Union it was decided (reports the *Farmers' Weekly*) to press headquarters to urge the Ministry of Agriculture and the W.A.E.C. to make more feeding-stuffs available for cattle immediately.

"Many cattle are in poor condition," said Mr. Sidney H. Wear (Chairman of the County Milk and Dairy Produce Committee) and Mr. F. J. Wilby (Langport) said extra feeding-stuffs were vitally needed in the next six to eight weeks. He added, "I heard a veterinary surgeon say last week he had known more deaths lately than he had known before in any corresponding period. I consider the chief cause is malnutrition."

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POOR FEEDING OF EIRE'S DAIRY HERD: "A 400-GALLON AVERAGE"

Addressing a food production conference in Limerick, Dr. Jas. Ryan, Minister for Agriculture, announced that recommendations made by Eire's Committee on Post-war Agriculture designed to step-up milk yields have been accepted. The Committee had given a great deal of attention to the grading-up of dairy cattle through the recording of yields; the registration of proved milkers and breeding from those and their progeny, both male and female. In the main those recommendations would be adopted. It would take some time before increased milk production, obtained in this way, would meet the present deficiency, but improved feeding would ensure a much quicker result.

Up to 1941 more butter was produced in Eire than was required for home consumption, and the surplus was exported. To-day the total was not sufficient to meet the demands of the home consumers, and in consequence it had to be rationed.

The report of the Committee to which the Minister referred stated that it is probable that the average milk yield for the whole of Eire does not exceed 400 gallons, and added that it was satisfied that adequate feeding alone could raise the lactation yield of the majority of cows in the country by at least 150 gallons per annum, while in many cases an even greater increase would result.

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HEAT TREATMENT SCHEMES: "AN UNSATISFACTORY POSITION"

In a recent issue the *Farmer and Stock-Breeder* states that compulsory heat treatment schemes for milk are not likely to be introduced into any area for a considerable time, adding that Dairymen's War-time Associations in a number of towns have expressed concern at the long delay in obtaining Ministerial approval of schemes, some of which have been in the hands of the Ministry for more than 12 months. "Already, 181 schemes have been submitted to the Ministry and a further 242 are in course of preparation. In several instances the cost of a scheme is estimated at more than £20,000.

"Replying to a recent question in the House of Commons, Colonel Llewellin (Minister of Food) said that it would not be practicable to specify particular areas until further progress was made in the examination of the scheme which involved substantial technical building and transport considerations. This is believed to be a parliamentary way of explaining that the schemes have been shelved. The highly controversial subject of heat treatment may be debated in the House of Commons before compulsion is applied in any area.

"Meanwhile, small retail milk distributors and producer-retailers are at a loss to know how to proceed. Some of them would like to install heat treatment plants in their own interests and wish to know whether they must first obtain the consent of the local Dairymen's War-time Association. Large distributors are, however, buying up retail businesses and extending their pasteurisation plants without consulting the Associations. The whole position is unsatisfactory."

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ZINC PHOSPHIDE AND THE POISONS LIST

"The recently extended use of zinc phosphide as a rat poison makes its inclusion in the Poisons List a matter for consideration," observes the *Pharmaceutical Journal* in its issue of February 17th, and proceeds: "Zinc phosphide is one of four poisons recommended by the Ministry of Food for use in the control of rodents, and it is the substance most commonly employed by local authorities in rat-clearing campaigns. So far as we are aware no fatalities involving human beings have been reported, but occasionally domestic animals have become victims. A recent report in *The Veterinary Record* described its effects on a number of geese and fowls. With the geese 1½ grains of zinc phosphide per ounce of food was given inadvertently, and in the dead fowls 1/12 to ¼ grain of the compound was recovered from the crop contents. The veterinary surgeons whose report we quote concluded that the toxic principle was phosphine, liberated after ingestion of the poison. This may be so, but the metallic portion of the radical, as is well known, is also poisonous, thereby increasing its potential

danger except when supplied and used under carefully controlled conditions. It has always been a matter of surprise to us that zinc phosphide has certain therapeutic uses; there are monographs on the compound in the B.P.C. and in the French Codex, and in each instance the dose is limited to ¼ grain. Its action has been thought to resemble that of phosphorus, as a substitute for which it was at one time extensively employed. It is also a matter of some interest to recall that although no zinc salts are included in the present Poisons List, zinc chloride was in Part II of the Schedule to the 1908 Poisons and Pharmacy Act. Perhaps at their next meeting the Poisons Board will examine the evidence for and against its inclusion in the List; from the first report of the Board it does not appear to have been brought to their notice when the List was originally compiled."

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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VETERINARY EDUCATION

Sir,—Professor J. D. Stewart's interesting letter in your issue of 10th inst. again brings to the front the much discussed question of veterinary education of the future. That a "widening of mental horizon and cultural outlook" of the student is desirable few will gainsay, provided—and I consider this a point of real importance—it is not at the expense of a certain standard of true efficiency and usefulness. By that I mean, speaking as a general practitioner, can we anticipate under the proposed higher education and culture, the turning out of young graduates having the training and more particularly the willingness to undertake the heavy, arduous and often somewhat repellent work of agricultural practice? There are lots of nice clean jobs to be obtained nowadays with regular hours and a fairly safe future. But I am one of those who consider the general practitioner to be the backbone of the profession and all other branches are appendages which have sprouted through the years.

It behoves us, therefore, to exercise great care that the backbone is kept well supplied with the right material. During the last decade I have had considerable experience of young graduates from various colleges, and also students, and I am happy to say I have invariably found them to be keen, intelligent and well trained and the right material to make successful country practitioners.

These are the product of the present system and I personally would be very chary of altering it at the present juncture. Is there any real reason to think that our Governing Body and our schools are unable to keep abreast of the times and to continue producing such material? I think not, and I believe many other practitioners will agree with me. If the supply of the right material fails, as conceivably it might, then I can well foresee the quack coming into his own on the farm. The R.C.V.S. knows what is required. It has steered us through a hundred years of uphill struggle from a lowly origin, and now conditions are more favourable it could surely be trusted to continue successfully to do so, with proper support and backing.

That some alterations and extensions in our scholastic system are necessary and desirable is doubtless correct. But these could surely be arranged without the throwing away of the sheet anchor with all its rights and privileges.

Yours faithfully,

61, Derngate, Northampton. J. J. Dunlop.
February 19th, 1945.

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THE VETERINARY SURGEON'S TITLE

Sir,—The recent correspondence regarding the proposed use of the courtesy title of doctor by veterinary surgeons has aroused considerable interest. That veterinary surgeons should assume such a title is no new proposition, as letters in similar terms to those now appearing have been published in the *Record* from time to time in the past. It may be symptomatic, however, both of the changing times and of the current realism of the profession that on this occasion the interest is such that the matter is not again likely to pass undebated into oblivion.

In the course of visits to various parts of the country the opportunity has been taken of seeking the views of colleagues on this subject. One has been struck by the fact that among the many persons contacted—including practitioners, research workers, advisory officers and others—there is almost complete unanimity of opinion that, taken over all, the profession would definitely benefit by the assumption of the title doctor. Indeed many have said that such a step would do more than any other single action which the profession could take to raise its position in the eyes of the public. Moreover, it has been very noticeable that those members who are already able to use the title of doctor by virtue of possession of a doctorate in science, philosophy or other subject were unanimous regarding the value of the use of the title when dealing with members of other professions, Government officials, and the public at large.

Doubtless arguments can be advanced against the assumption of the title of doctor by veterinary surgeons on the grounds that in addition to doctors of medicine there are now doctors of Divinity, law, chemistry and many other subjects and that because of this multiplicity the title has been degraded. This, however, is not really so. A doctorate is still regarded as the highest or at least a commendably high standard of qualification in the professions. The training now being given to and the standard of knowledge demanded from veterinary students are such that graduates are entitled to a doctorate if only on comparison with analogous branches of science. There need be no anxiety, therefore, regarding the fundamental justice of the veterinary surgeon's claim to the courtesy title. It would seem that only natural diffidence will prevent the profession from making that claim.

One has been greatly heartened recently by the virile attitude of progressive members of the profession. It appears to have been recognised that long enough has been waited for outside aid towards the profession's rightful aspirations, and that before such aid can be forthcoming and full recognition afforded, the profession itself in many fields must take action on its own initiative. Here then is a case in point.

Discussion of the matter by the Divisions of the N.V.M.A. is a logical evolution from the interest which has been aroused and this course of action is commended to the many who are known to wish to further this important proposition.

Yours faithfully,

"Corbiere," D. D. Ogilvie.
36, Kings Road, Sale, Cheshire.
February 18th, 1945.

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Sir,—While I do not consider the correspondence on our title worthy of much of your valuable space, since the U.S.A. is mentioned, it may be of interest to know the opinion of one eminent American veterinarian of my acquaintance also holding a medical degree. Discussing the multiplicity of doctors, he expressed the opinion that it was a compliment to be called a mere "Mr." Surely our own medical profession hold this view or why do consultants adopt the title "Mr."?

In my experience abroad, the title "Doctor" is of no value to discriminate the qualified from the unqualified.

I hold the view that status is a personal matter and in no way influenced by additional titles.

Yours faithfully,

Acle, Nr. Norwich. O. V. Gunning.
February 18th, 1945.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Parasitic Mange*	Sheep Scab	Swine Fever
Jan. 16th to 31st, 1945 ...	4	15	—	1	41
Corresponding period in—					
1944 ...	12	2	2	12	27
1943 ...	14	1	—	19	28
1942 ...	18	—	1	16	28
Total Jan. 1st to Jan. 31, 1945	13	23	1	8	87
Corresponding period in—					
1944 ...	24	3	3	34	48
1943 ...	28	8	—	28	41
1942 ...	30	—	3	47	42

NOTE.—The figures for the current year are approximate only.
* Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at January 31st, 1945, was as follows:—

England	Wales	Scotland	Total (Great Britain)
4,458	8,441	4,286	17,185